



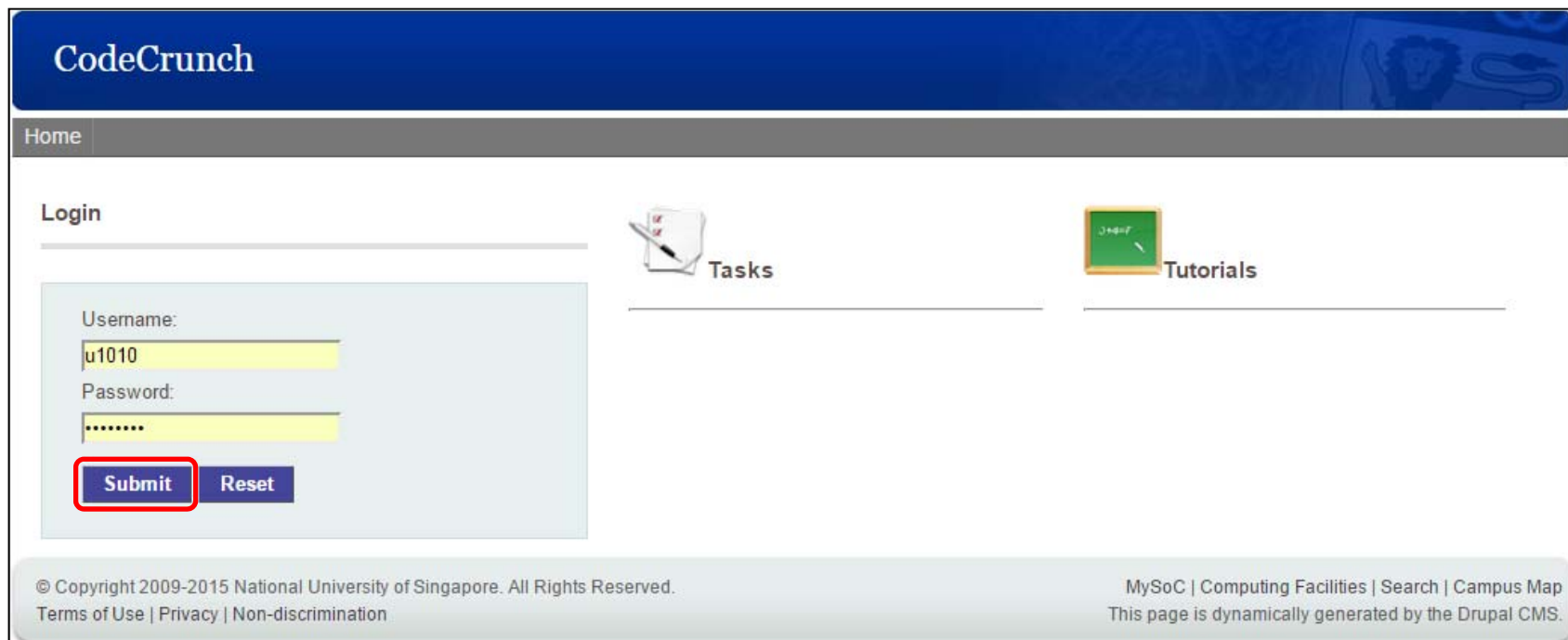
**CodeCrunch**



**Getting Started**

# Logging in

- ▶ Point your browser to <https://codecrunch.comp.nus.edu.sg/>
  - ▶ The recommended browser is IE. Other browsers may not be fully compatible with CodeCrunch.
- ▶ Use your **NUSNET id** and **password** to login.



The screenshot shows the CodeCrunch login interface. At the top is a dark blue header with the 'CodeCrunch' logo. Below it is a navigation bar with a 'Home' link. The main content area features a 'Login' section on the left with a light blue background. This section contains a 'Username:' label, a text input field with 'u1010', a 'Password:' label, a password input field with masked characters, and two buttons: 'Submit' (highlighted with a red border) and 'Reset'. To the right of the login section are two icons: a notepad icon labeled 'Tasks' and a chalkboard icon labeled 'Tutorials'. The footer contains copyright information for the National University of Singapore and links to 'MySoC', 'Computing Facilities', 'Search', and 'Campus Map'. It also states that the page is dynamically generated by the Drupal CMS.

CodeCrunch

Home

Login

Username:  
u1010

Password:  
\*\*\*\*\*

Submit Reset

Tasks

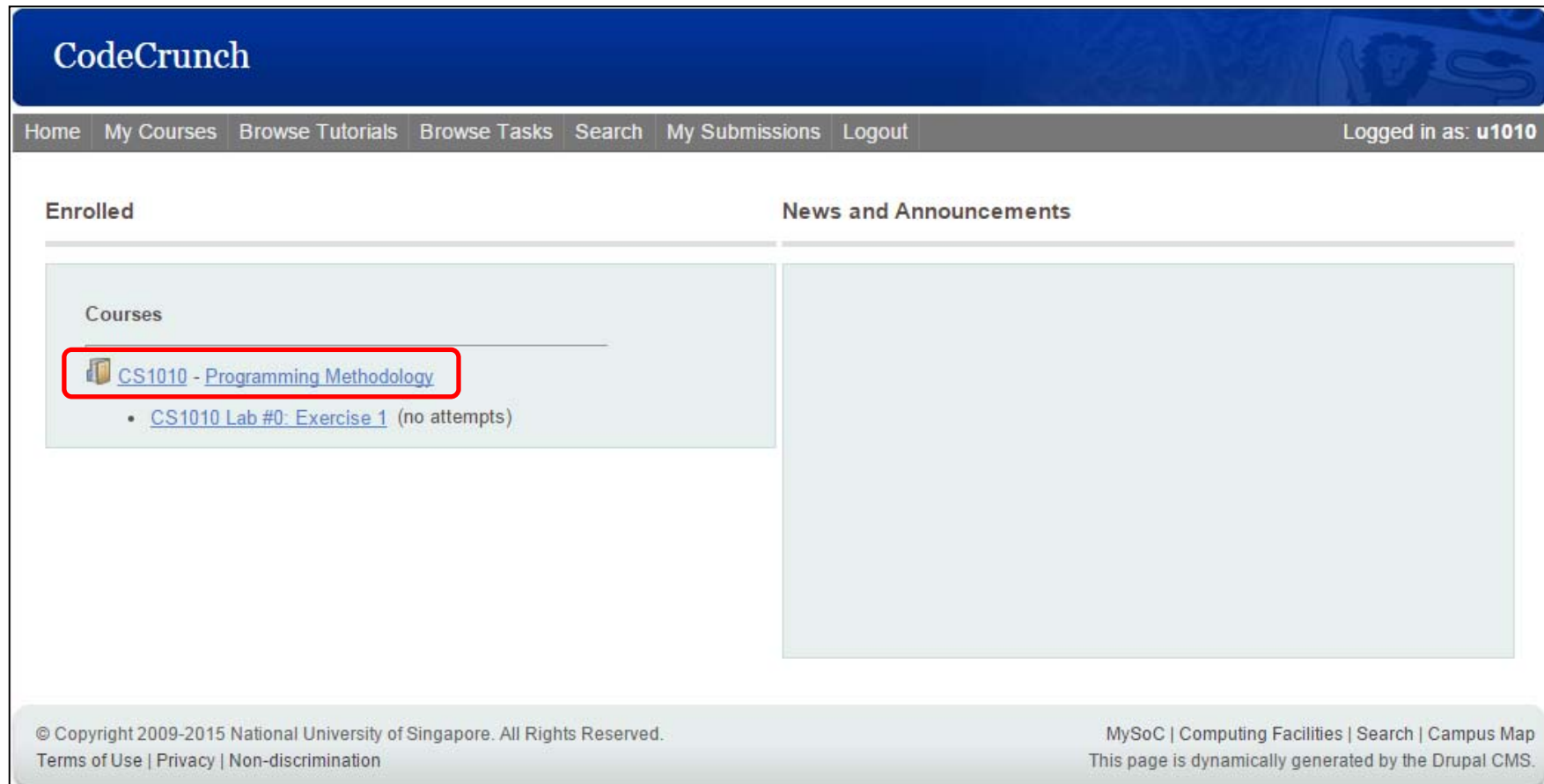
Tutorials

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MySoC | Computing Facilities | Search | Campus Map  
This page is dynamically generated by the Drupal CMS.

# Selecting a task (1 / 3)

- ▶ Click the **course name** from dashboard



The screenshot shows the CodeCrunch dashboard. At the top is a dark blue header with the 'CodeCrunch' logo. Below it is a navigation bar with links: Home, My Courses, Browse Tutorials, Browse Tasks, Search, My Submissions, and Logout. On the right of the navigation bar, it says 'Logged in as: u1010'. The main content area is divided into two columns. The left column is titled 'Enrolled' and contains a section for 'Courses'. In this section, the course 'CS1010 - Programming Methodology' is listed with a red rectangular box around it. Below the course name, there is a link to 'CS1010 Lab #0: Exercise 1' with the text '(no attempts)'. The right column is titled 'News and Announcements' and is currently empty. At the bottom of the page, there is a footer with copyright information and links to 'MySoC | Computing Facilities | Search | Campus Map'.


CodeCrunch

Home | My Courses | Browse Tutorials | Browse Tasks | Search | My Submissions | Logout | Logged in as: u1010

Enrolled

News and Announcements

Courses

 [CS1010 - Programming Methodology](#)

- [CS1010 Lab #0: Exercise 1](#) (no attempts)

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MySoC | Computing Facilities | Search | Campus Map  
This page is dynamically generated by the Drupal CMS.

# Selecting a task (2/3)

- ▶ Click the **task name**

**CodeCrunch**

Home | My Courses | Browse Tutorials | Browse Tasks | Search | My Submissions | Logout

Logged in as: u1010

**Course View**

Course Code: CS1010  
Course Name: Programming Methodology  
Semester:  
Description:  
Enrolment Status: Enrolled Student

**Tasks**

Task Name	Date Due	Grade Last Attempt	
<a href="#">CS1010 Lab #0: Exercise 1</a>		No attempt / Not graded	

1/1

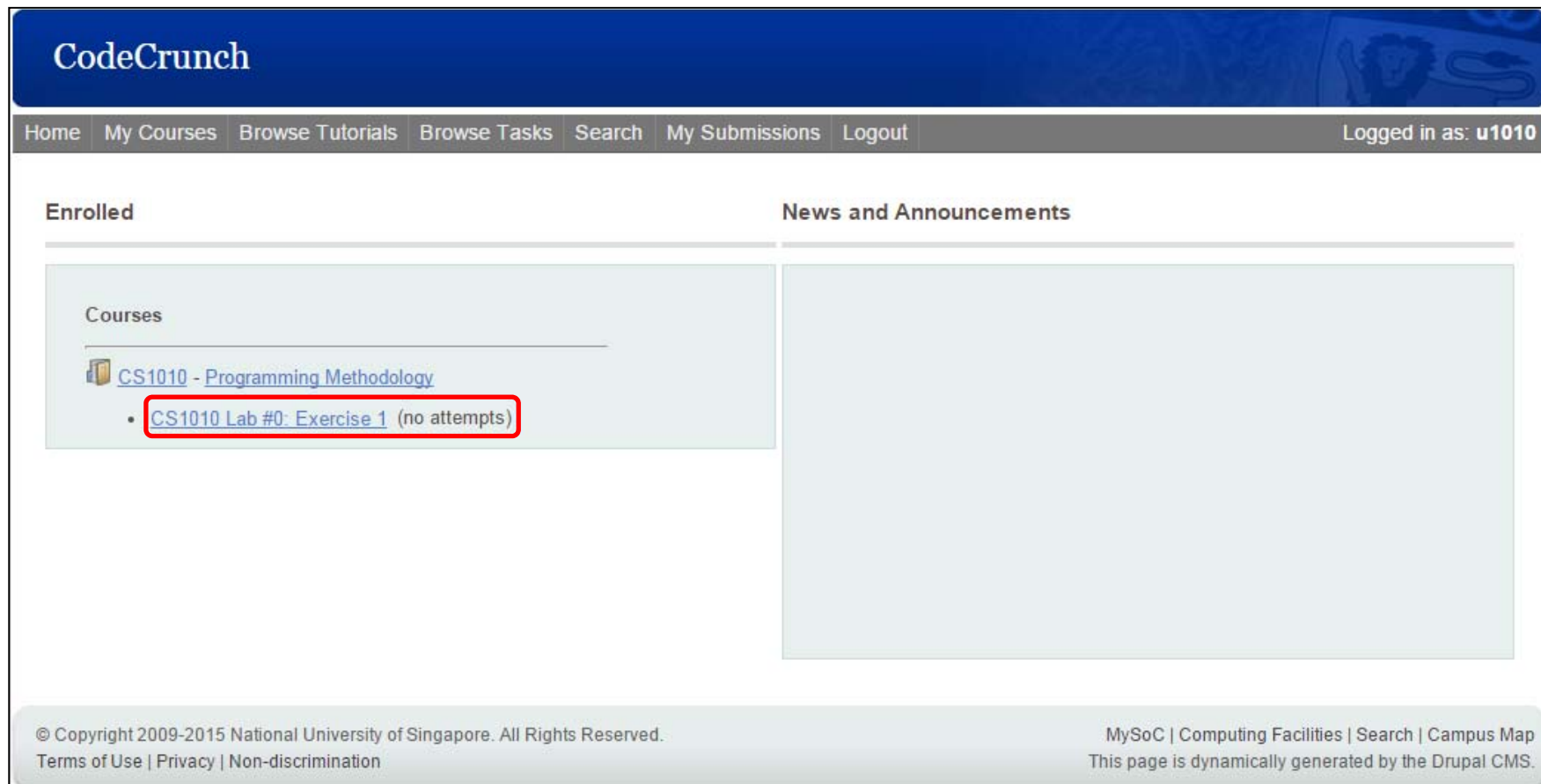
10 ▼

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MySoC | Computing Facilities | Search | Campus Map  
This page is dynamically generated by the Drupal CMS.

# Selecting a task (3/3)

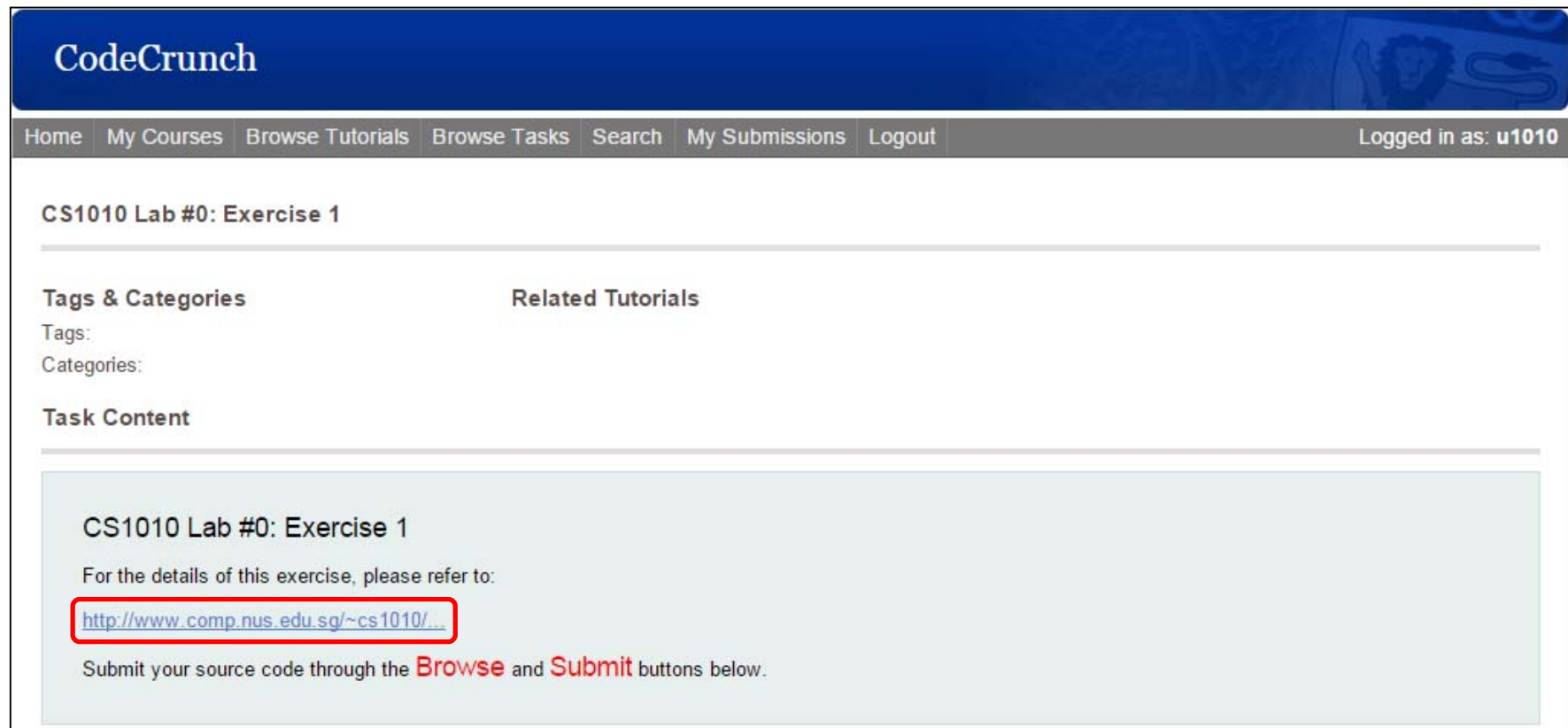
- ▶ Shortcut for selecting an **uncompleted** task:  
Click the **task name** from dashboard



The screenshot shows the CodeCrunch dashboard interface. At the top is a dark blue header with the 'CodeCrunch' logo. Below it is a navigation bar with links: Home, My Courses, Browse Tutorials, Browse Tasks, Search, My Submissions, and Logout. On the right of the navigation bar, it says 'Logged in as: u1010'. The main content area is divided into two columns. The left column is titled 'Enrolled' and contains a 'Courses' section. Under 'Courses', there is a link for 'CS1010 - Programming Methodology'. Below this link, there is a list item: '• CS1010 Lab #0: Exercise 1 (no attempts)'. This list item is highlighted with a red rectangular box. The right column is titled 'News and Announcements' and is currently empty. At the bottom of the page, there is a footer with copyright information: '© Copyright 2009-2015 National University of Singapore. All Rights Reserved. Terms of Use | Privacy | Non-discrimination'. On the right side of the footer, it says 'MySoC | Computing Facilities | Search | Campus Map' and 'This page is dynamically generated by the Drupal CMS.'

# Solving a task (1 / 4)

- ▶ Click the [URL](#) for the problem description page



The screenshot shows the CodeCrunch website interface. At the top is a dark blue header with the "CodeCrunch" logo. Below it is a navigation bar with links: Home, My Courses, Browse Tutorials, Browse Tasks, Search, My Submissions, and Logout. On the right of the navigation bar, it says "Logged in as: u1010". The main content area is titled "CS1010 Lab #0: Exercise 1". Below this title, there are two columns: "Tags & Categories" and "Related Tutorials". Under "Tags & Categories", there are labels for "Tags:" and "Categories:". Below these is a section titled "Task Content". Inside the "Task Content" section, there is a light blue box containing the text "CS1010 Lab #0: Exercise 1". Below this, it says "For the details of this exercise, please refer to:" followed by a URL <http://www.comp.nus.edu.sg/~cs1010/...> which is highlighted with a red rectangular box. At the bottom of the light blue box, it says "Submit your source code through the **Browse** and **Submit** buttons below."

# Solving a task (2/4)

## ► Read and understand the problem

### Lab #0: Trial Lab

School of Computing, National University of Singapore

#### 0 Introduction

This is a non-graded lab. However, you need to submit your program on **CodeCrunch** in the presence of your discussion leader (DL) during your first discussion session, to show that you know how to do it.

This lab requires you to do only 1 exercise.

If you have any questions on any lab exercise, please may post your queries **on the relevant IVLE discussion forum**. Important: Do **not** post your programs (partial or complete) in the forum before the deadline!

#### 1 Exercise 1: Volume of a Box

##### 1.1 Learning objectives

- Using CodeCrunch.
- Run through edit-compile-run cycle of program development.
- Using the UNIX environment.
- Detection and correction of errors in a program.

##### 1.2 Task statement

Write a program `box_volume.c` that reads three positive integers representing the length, width and height of a box, and computes the volume of the box.

You may assume that the volume of the box does not exceed the maximum value representable in the `int` data type. (What is that value? See [1.5 Exploration](#) below.)

Check sample run for input and output format, and submit your program through [CodeCrunch](#).

# Solving a task (3/4)

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- ▶ Download skeleton files, and/or sample input and output files from the problem description page

## 1.5 Skeleton file and sample test data

- [box\\_volume.c](#)
- Input files: [box1.in](#) | [box2.in](#) | [box3.in](#) | [box4.in](#) | [box5.in](#)
- Output files: [box1.out](#) | [box2.out](#) | [box3.out](#) | [box4.out](#) | [box5.out](#)

## 1.6 Explanation on input and output files

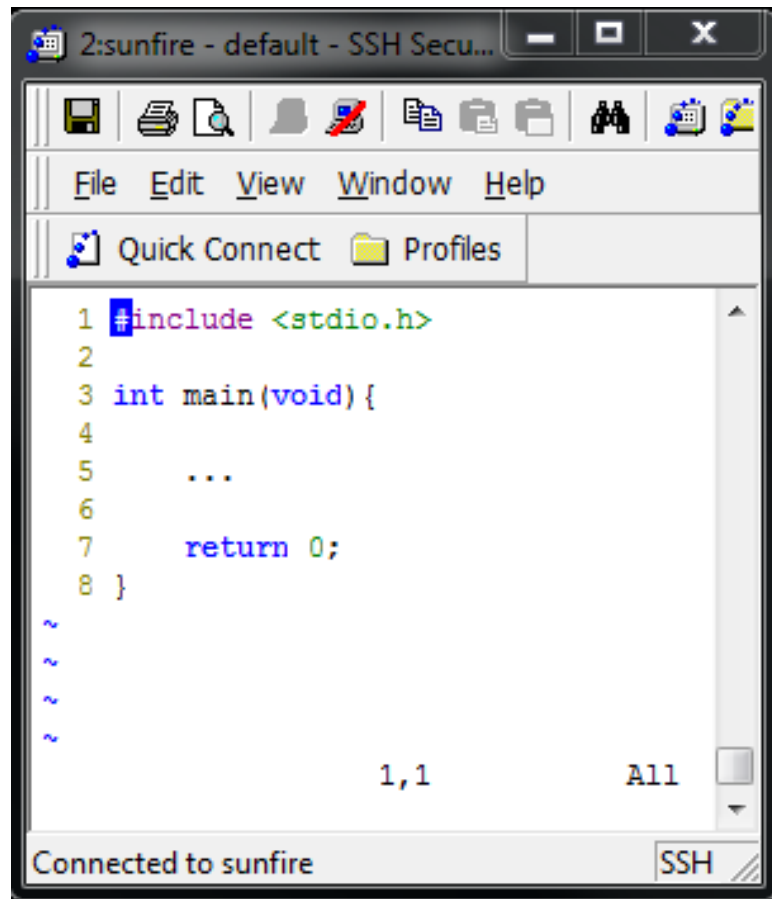
Note that in Section 1.5 above we provide the input and output files for your ease of checking. In writing your programs, you may assume that the input data are entered interactively (through stdin, i.e. the keyboard), and the outputs of your program are displayed on the monitor (stdout).

CodeCrunch takes your submitted program, compiles and runs it on each of the test data input files provided, using a technique called input file redirection.



## Solving a task (4/4)

- ▶ Write your program and test it thoroughly before submission.



The screenshot shows a terminal window titled "2:sunfire - default - SSH Secu...". The window contains a vim editor interface with a menu bar (File, Edit, View, Window, Help) and a toolbar. The editor displays a C program with the following code:

```
1 #include <stdio.h>
2
3 int main(void) {
4
5     ...
6
7     return 0;
8 }
```

The status bar at the bottom indicates "Connected to sunfire" and "SSH".

- ▶ You are encouraged to use the editor **vim** in your UNIX account.
- ▶ After testing your program, you may transfer it to your hard-disk for submission to CodeCrunch.

# Submitting a task (1 / 3)

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- ▶ Once you are done, scroll down the page to the [Submission \(Course\)](#) section
- ▶ Click [Browse](#) and select your solution file.
  - ▶ Take care to submit the correct file – some exercises have limited number of submissions.

**Submission (Course)**

Select course:

CS1010 Programming Methodology ▼

Your Files:

BROWSE

SUBMIT (only .java, .c, .cpp and .h extensions allowed)

To submit multiple files, click on the Browse button, then select one or more files. The selected file(s) will be added to the upload queue. You can repeat this step to add more files. Check that you have all the files needed for your submission. Then click on the Submit button to upload your submission.

# Submitting a task (2/3)

---

- ▶ Wait for the **loading box** to appear
- ▶ Click **Submit**
  - ▶ The progress bar will start to fill **only after you click Submit**.


**Submission (Course)**

Select course:

CS1010 Programming Methodology ▼

Your Files:

BROWSE

box\_volume.c (0.44KB) 

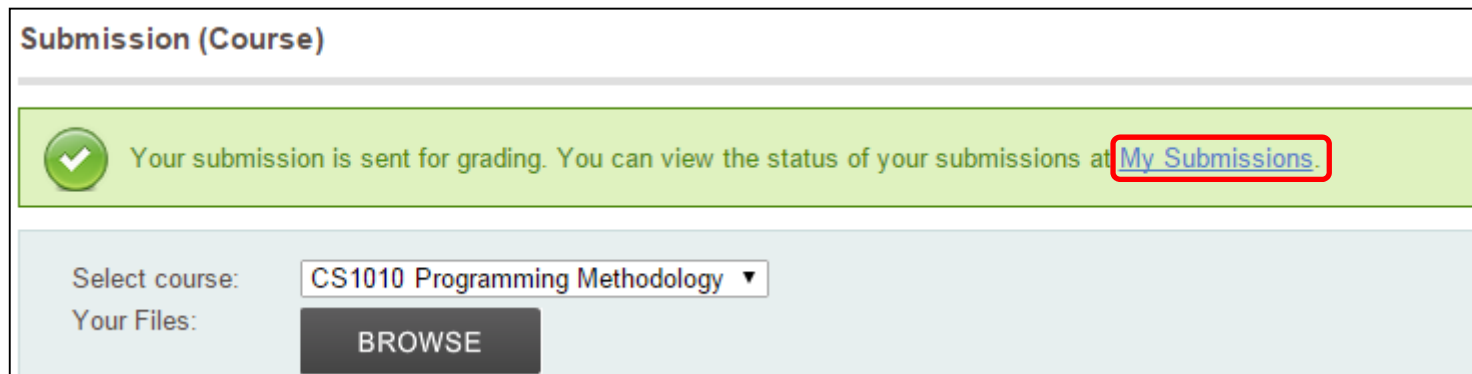
SUBMIT

(only .java, .c, .cpp and .h extensions allowed)

To submit multiple files, click on the Browse button, then select one or more files. The selected file(s) will be added to the upload queue. You can repeat this step to add more files. Check that you have all the files needed for your submission. Then click on the Submit button to upload your submission.

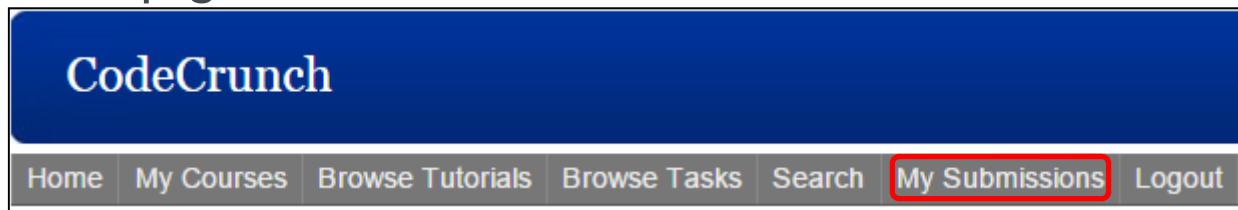
## Submitting a task (3/3)

- ▶ You should see a **green box** indicating that your program has been submitted successfully.
- ▶ Click **My Submissions** to see the grade awarded for that submission



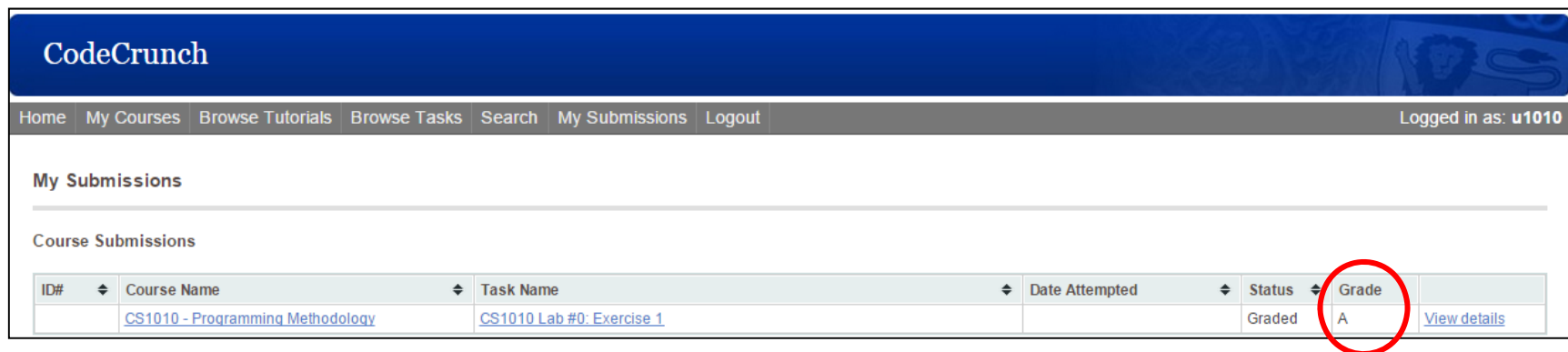
The screenshot shows a web interface for submitting tasks. At the top, there's a header "Submission (Course)". Below it, a green box with a checkmark icon contains the text: "Your submission is sent for grading. You can view the status of your submissions at [My Submissions](#)". The link "My Submissions" is highlighted with a red rectangle. Below the green box, there's a section for course selection. It says "Select course:" followed by a dropdown menu showing "CS1010 Programming Methodology". Below that, it says "Your Files:" followed by a "BROWSE" button.

- ▶ Alternatively, click **My Submissions** from the navigation bar to get to the same page for the result.



# Reviewing a submission (1 / 3)

- ▶ You should see the following table containing the details of your submission.
  - ▶ If you are awarded a grade of **A**, then congratulations, you have completed the task successfully!



The screenshot shows the CodeCrunch website interface. At the top is a dark blue header with the 'CodeCrunch' logo. Below it is a navigation bar with links: Home, My Courses, Browse Tutorials, Browse Tasks, Search, My Submissions, and Logout. On the right of the navigation bar, it says 'Logged in as: u1010'. The main content area is titled 'My Submissions' and contains a section for 'Course Submissions'. This section displays a table with the following data:

ID#	Course Name	Task Name	Date Attempted	Status	Grade	
	<a href="#">CS1010 - Programming Methodology</a>	<a href="#">CS1010 Lab #0: Exercise 1</a>		Graded	A	<a href="#">View details</a>

The 'Grade' cell, which contains the letter 'A', is circled in red in the original image.

- ▶ If no grade is shown and the submission status is **pending**, please refresh the page in a few seconds.

# Reviewing a submission (2/3)

- ▶ If you did not succeed, click [View details](#) to check your output.

**CodeCrunch**

Home My Courses Browse Tutorials Browse Tasks Search My Submissions Logout Logged in as: u1010

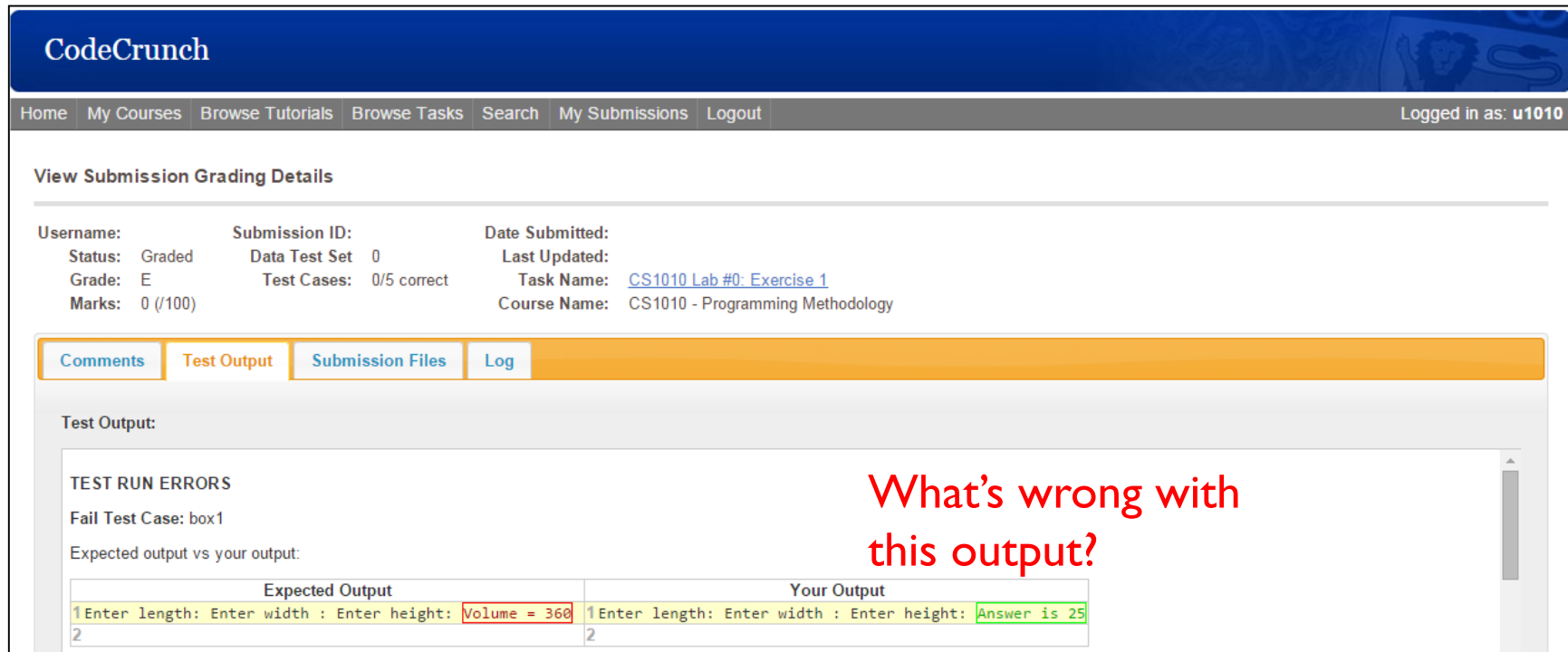
**My Submissions**

Course Submissions

ID#	Course Name	Task Name	Date Attempted	Status	Grade	
	<a href="#">CS1010 - Programming Methodology</a>	<a href="#">CS1010 Lab #0: Exercise 1</a>		Graded	E	<a href="#">View details</a>

# Reviewing a submission (3/3)

- ▶ Click **Test Output** and check the errors in the output of your submission



The screenshot shows the CodeCrunch submission review interface. The top navigation bar includes links for Home, My Courses, Browse Tutorials, Browse Tasks, Search, My Submissions, and Logout. The user is logged in as 'u1010'. The main section is titled 'View Submission Grading Details' and displays submission information: Username, Status (Graded), Submission ID, Data Test Set (0), Date Submitted, Last Updated, Grade (E), Test Cases (0/5 correct), Marks (0 /100), Task Name (CS1010 Lab #0: Exercise 1), and Course Name (CS1010 - Programming Methodology). Below this is a tabbed interface with 'Test Output' selected. The 'Test Output' section shows 'TEST RUN ERRORS' for 'Fail Test Case: box1'. It compares 'Expected Output' with 'Your Output' for two test cases. In the first test case, the expected output is 'Volume = 360' and the user's output is 'Answer is 25'. In the second test case, both expected and user outputs are '2'. A red text overlay asks 'What's wrong with this output?'.

CodeCrunch

Home My Courses Browse Tutorials Browse Tasks Search My Submissions Logout Logged in as: u1010

View Submission Grading Details

Username: Submission ID: Date Submitted:  
Status: Graded Data Test Set: 0 Last Updated:  
Grade: E Test Cases: 0/5 correct Task Name: [CS1010 Lab #0: Exercise 1](#)  
Marks: 0 (/100) Course Name: CS1010 - Programming Methodology

Comments Test Output Submission Files Log

Test Output:

TEST RUN ERRORS

Fail Test Case: box1

Expected output vs your output:

Expected Output	Your Output
1 Enter length: Enter width : Enter height: Volume = 360	1 Enter length: Enter width : Enter height: Answer is 25
2	2

What's wrong with this output?

# Grading

---

- ▶ Note that CodeCrunch is used to provide you instant feedback on the correctness of your programs based on a few sets of test data made known to you.
- ▶ You programs will be tested on **more test data** that are **unknown** to you, so you are to thoroughly test your programs yourself.
- ▶ The **last submitted program** for each exercise will be manually graded on style and design besides correctness.
- ▶ You may refer to the Lab Guidelines document <http://www.comp.nus.edu.sg/~cs1010/labs/2017s1/labguide.html> which also includes the general grading guidelines.



# Additional Information

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- ▶ The next three slides contain additional information/tips which you may skip for now, until you are more familiar with CodeCrunch.

# Input and Output Files

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- ▶ Your program works on interactive inputs (for now), but CodeCrunch executes your program by redirecting the input data from a text file.
  - ▶ This way, it can test your program by reading input data from different text files, one at a time.
- ▶ You can do this in UNIX using input redirection `<`
  - ▶ Assuming that you have copied the input text file `set1.in` into your own directory, you can type:  
`a.out < set1.in`
- ▶ Likewise, you may also use output redirection `>` to redirect output to a text file instead of to the screen:  
`a.out < set1.in > myset1.out`

# Using the 'diff' command

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- ▶ You may then use the **diff** command in UNIX to compare your own output file **myset1.out** with the correct output file **set1.out** provided on the CSI010 website  
**diff myset1.out set1.out**
- ▶ If the two files (myset1.out and set1.out) are identical, no output will be produced by the **diff** command.
- ▶ This is handy in cases where the differences between your output and the model output are not visible to the eyes, for example, trailing spaces in an output line.

# Program that fails all test cases

---

- ▶ Q: I tested my program and it works well, but when I submit it to CodeCrunch, it fails all the test cases! Why?
- ▶ This is a very commonly encountered problem once students start to submit their programs to CodeCrunch
- ▶ A verly likely reason is that you have forgotten to initialise some variable properly. Remember that an uninitialised numeric variable may not contain zero.
- ▶ Correct your program and resubmit to CodeCrunch!
  - ▶ Some students just ignored CodeCrunch feedback and did nothing to correct their program when it fails all test cases. Don't do this!

# THE END